

RAILROAD CROSSING SAFETY

The safety of railroad crossings has long been an area of legislative interest, and several legislators have recently raised concerns about whether the State is appropriately spending available funds to improve safety when apparent hazards exist. In June 1999, a federal report indicated that \$13.0 million in federal funding for railroad crossing safety had been apportioned to Wisconsin but not spent, the largest balance of all states.

In response to concerns about the use of federal funding for railroad crossing safety projects, we reviewed the number of projects the Office of the Commissioner of Railroads has ordered but not yet funded, as well as the State's process for deciding when railroad crossing safety projects will be funded. In addition, we updated selected information from our 1996 letter to the co-chairpersons of the Joint Legislative Audit Committee that also addressed the administration and funding of Wisconsin's railroad crossing safety program.

Wisconsin's Railroad Crossings

As shown in Table 1, there were 7,999 railroad crossings in Wisconsin as of July 1999. The State's railroad crossing safety program focuses on the 4,406 crossings intersecting with public roads, although the State occasionally may make improvements at selected pedestrian crossings. Not included in the program are 2,761 crossings located on private property that are not open to public use, and 692 public crossings that are grade separated (that is, at which a bridge allows vehicles to pass either over or under the train tracks).

Table 1

Wisconsin Railroad Crossings
July 1999

	<u>Number of Crossings</u>	<u>Percentage of Total Crossings</u>
Public Crossings		
At Grade*	4,406	55.1%
Grade Separated**	<u>692</u>	<u>8.6</u>
Total Public Crossings	5,098	63.7%
Private Crossings:		
At Grade*	2,680	33.5%
Grade Separated**	<u>81</u>	<u>1.0</u>
Total Private Crossings	2,761	34.5%
Pedestrian Crossings:		
At Grade*	102	1.3%
Grade Separated**	<u>38</u>	<u>0.5</u>
Total Pedestrian Crossings	140	1.8%
All Crossings:		
At Grade*	7,188	89.9%
Grade Separated**	<u>811</u>	<u>10.1</u>
Total All Crossings	7,999	100.0%

* Road crosses train track.

** Road goes over or under the train track.

As shown in Table 2, the majority of crossings for which the State has safety responsibility are located in towns and on city streets. Only 337, or 7.6 percent, of the crossings for which the State has safety responsibility are on the state highway system, although an estimated 32.4 percent of the traffic over railroad crossings is on state highways.

Table 2

Location of Railroad Crossings on Public Roads
July 1999

	<u>Rural</u>	<u>Urban</u>	<u>Total</u>
Town Roads	1,423	91	1,514
City Streets	199	1,271	1,470
County Highways	513	104	617
Village Streets	313	141	454
State Highways	186	151	337
Other	<u>13</u>	<u>1</u>	<u>14</u>
Total	2,647	1,759	4,406

Several types of warning and safety equipment can be used to protect railroad crossings. For example:

- warning signs beside the road are the sole protection at approximately 56 percent of public crossings;
- roadside or overhead flashing lights protect approximately 29 percent of public crossings; and
- restrictive equipment, such as barrier gates, standard gate arms, and preemptive traffic light controllers, protect approximately 12 percent of public crossings.

The cost of safety equipment ranges from minimal expense for signs to more than \$200,000 for flashing lights, multiple barrier gates, and a preemptive light controller. Such controllers are designed to override the normal traffic light pattern at an intersection to ensure that vehicles have cleared nearby tracks before a train crosses the intersection.

From 1974 through 1998, the number of vehicle/train accidents declined by 78.1 percent, from 401 to 88, while the number of vehicle miles traveled annually nearly doubled. As shown in Table 3, the number of miles traveled by train reached a low of 8.0 million in 1985; however, since 1985, the number of train miles traveled increased by 67.5 percent, reaching 13.4 million in 1998.

Table 3

**Train and Motor Vehicle Miles Traveled,
Accidents, Deaths, and Injuries**

<u>Year</u>	<u>Train and Switch Miles (millions)</u>	<u>Motor Vehicle Miles (billions)</u>	<u>Accidents</u>	<u>Deaths</u>	<u>Injuries</u>
1974	16.8	28.0	401	40	235
1975	14.1	28.6	323	16	139
1976	14.5	30.2	374	18	203
1977	13.5	31.6	403	30	194
1978	13.6	33.9	389	29	210
1979	11.5	33.0	383	15	213
1980	12.8	33.2	276	16	154
1981	11.6	33.6	249	20	131
1982	9.2	32.8	204	12	130
1983	8.7	34.1	194	10	111
1984	9.2	35.5	186	14	93
1985	8.0	36.7	187	8	90
1986	8.1	38.4	147	17	68
1987*	8.4	40.2	154	9	73
1988	9.0	42.3	188	8	110
1989	9.1	43.1	171	7	92
1990	10.9	44.3	161	4	89
1991	11.3	45.5	163	12	101
1992	11.5	47.5	129	7	76
1993	11.8	48.8	151	7	113
1994	12.2	50.3	165	14	92
1995	12.7	51.4	122	8	65
1996	13.2	52.6	130	5	72
1997	12.6	53.7	103	6	54
1998	13.4	N/A	88	4	50

* Before 1987, vehicle/train accidents were classified in a different manner and did not include pedestrians killed by trains or collisions of motor vehicles that involved trains only incidentally.

Accidents are included only if a motor vehicle was involved. The Office of the Commissioner of Railroads indicates that in 1998 there were three fatalities involving either snowmobiles or pedestrians at public crossings. Those fatalities are not included in the table.

Source: Department of Transportation

Since 1994, the number of vehicle accidents has declined for all types of collisions. However, as shown in Table 4, the number of accidents involving a vehicle and a train at a railroad crossing decreased at the greatest rate.

Table 4

Vehicle Accidents
1994 and 1998

<u>Collision Category</u>	<u>Number in</u> <u>1994</u>	<u>Number in</u> <u>1998</u>	<u>Percentage</u> <u>Decrease</u>
With Another Vehicle	88,266	75,063	15.0%
With a Deer	24,573	21,514	12.4
With a Fixed Object	23,791	19,595	17.6
Other*	11,530	9,571	17.0
With a Train	<u>165</u>	<u>88</u>	46.7
Total	148,325	125,831	15.2%

* Includes collisions with pedestrians and bicycles, as well as non-collision accidents such as jackknife and immersion accidents.

Although the number of railroad crossing accidents has declined in recent years, continuing increases in train and vehicle traffic and the desire to bring existing warning devices up to modern standards require continuing safety review and improvements. According to staff in the Office of the Commissioner of Railroads, at least six recent accidents, including at least four fatalities, occurred at railroad crossings where the Office had identified the need for improvements but improvements had not yet been made.

Responsibility for Wisconsin's Railroad Crossings

The Office of the Commissioner of Railroads, which is attached for administrative purposes to the Public Service Commission, and the Department of Transportation are both responsible for safety issues related to public railroad crossings. Both identify projects for federal funding for railroad crossing safety.

Office of the Commissioner of Railroads

The Office of the Commissioner of Railroads, which was created by 1993 Wisconsin Act 123, is headed by the Commissioner of Railroads, who is an appointee of the Governor, and staffed by three investigators, one legal counsel, and one administrative support employee. Under ss. 195.28 and 195.29, Wis. Stats., the Commissioner and his staff are responsible for determining whether public highway and railroad grade crossings protect and promote public safety. The Office's administrative costs, which were budgeted at \$448,700 for fiscal year (FY) 1998-99, are funded by an assessment on railroad companies.

Either of its own accord or upon petition by the Department of Transportation, a city council, a village or town board, a superintendent of highways, five or more electors, a railroad corporation, or a railroad historical society, the Office may investigate the safety of specific railroad crossings. If the Office determines that protection is not adequate, it may issue an order specifying the improvements that need to be made and a deadline for their completion. Upon the request of an interested party, the Office will hold a public hearing to discuss its investigation of a specific railroad crossing.

During 1998, the Office initiated at least 89 investigations involving at least 246 railroad crossings. It issued 72 orders relating to railroad crossings; 48 of the 72 ordered some type of improvement to the signals at the crossing. The Office maintains two lists of projects that have been ordered but not yet funded. It currently has ordered at least 165 warning device projects, with an estimated cost of \$14.0 million, for which federal funding that is expected to be received through September 30, 2005, has been earmarked. The second list, which is included as Appendix I, is for ordered projects for which funding has not yet been specifically identified. As shown in Appendix I, the Office has a waiting list of 29 warning device projects, with an approximate cost of \$2.4 million.

Department of Transportation

Although it does not have explicit statutory responsibility for assessing railroad crossing safety, the Department of Transportation has overall responsibility for ensuring highway safety. To help fulfill this responsibility, the Department may petition the Office to determine whether a railroad crossing provides adequate public protection. In addition, with the cooperation of the affected railroad company, the Department initiates its own projects aimed at improving railroad crossing safety through the installation of warning devices or through hazard elimination projects, such as smoothing the roadway surrounding a railroad crossing or building bridges to direct traffic over or under a crossing.

To select projects to be funded with federal railroad crossing safety funds, the Department has established an informal advisory committee that consists of 11 employees from 4 of its functional areas, the Commissioner of Railroads and 2 employees from his office, and a Federal Highway Administration employee whose role is to advise the committee on whether proposed projects

represent allowable uses of federal railroad crossing safety funds. The committee selects projects from those submitted by the Department's district staff and the Office of the Commissioner of Railroads.

Although railroad companies are responsible for installing safety equipment, district staff in the Department review equipment installations to ensure safety equipment has been installed properly before the companies are reimbursed.

Funding Railroad Crossing Safety Projects

The State has established several appropriations for the receipt of federal highway funds. Appropriation 20.395(2)(gx) is generally used for receipt of railroad crossing safety funds, but the Department may elect to account for federal railroad crossing safety funds for certain projects in other appropriations. From FY 1989-90 through FY 1997-98, \$1,849,300 was budgeted in appropriation 20.395(2)(gx) annually. By long-standing policy, \$1.0 million of this appropriation was reserved for railroad crossing safety projects ordered by the Office; the remaining \$849,300 was set aside for railroad crossing safety projects chosen by the Department's committee.

In September 1998, the Joint Finance Committee appropriated \$500,000 under s. 13.10, Wis. Stats., based on a request by the Office to reduce its backlog of ordered crossing improvement projects. In December 1998, an additional \$1.2 million was appropriated based on the Department's plan to spend additional federal funding that had been made available in federal fiscal year (FFY) 1998-99. This \$1.2 million, like the \$500,000, was intended to be used to reduce the Office's backlog of ordered crossing safety improvements. As a result of these additional funds, final FY 1998-99 budget authority under s. 20.395(2)(gx), Wis. Stats., was \$3,549,300.

As part of the current FY 1999-2001 budget process, the Department requested, and the Governor and the Joint Finance Committee approved, a continuation of the FY 1998-99 level of funding for the appropriation under s. 20.395(2)(gx). Under this level of funding, the Department anticipates the Office's backlog as of December 1998 will be eliminated in approximately three years.

However, the amounts appropriated in s. 20.395(2)(gx), Wis. Stats., before FY 1998-99 represent less than half of the annual federal apportionment for railroad crossing safety programs in each of the last five years. An apportionment is the maximum amount of funding the federal government will provide for a specific program. In order to take advantage of the funding, the State needs to receive federal approval for qualifying projects. An estimated cost of an approved project becomes an obligation and reduces the balance available in the apportionment. During the past five years, the federal government has made funding available to cover only 93 percent of all federal highway apportionments.

As shown in Table 5, Wisconsin has received annual apportionments of \$3.9 million for the past few years, but until 1999 it consistently obligated less than this amount. A federal report released in June 1999 listed an unobligated balance of \$13.0 million. It appears this number was calculated by adding \$9.0 million that was carried over from FFY 1997-98 and \$3.9 million that represented the apportionment for FFY 1998-99.

Table 5

Unobligated Balance for Federal Railroad Crossing Safety Program
FFY 1994-95 through FFY 1998-99

<u>Federal Fiscal Year</u>	<u>Unobligated Balance Carried Over From Prior Year</u>	<u>Apportionment</u>	<u>Total Available</u>	<u>Obligations</u>	<u>Year-end Unobligated Balance</u>
1994-95	\$5,435,860	\$3,929,021	\$ 9,364,881	\$1,983,540	\$7,381,341
1995-96	7,381,341	3,929,021	11,310,362	2,773,380	8,536,982
1996-97	8,536,982	3,929,021	12,466,003	3,781,417	8,684,586
1997-98	8,684,586	3,929,021	12,613,607	3,595,797	9,017,810
1998-99*	9,017,810	3,929,021	12,946,831	8,871,649	4,075,182

* Through July 19, 1999

Federal regulations require at least 50 percent of federal funding to be available for protective device projects; the other 50 percent may be used either for protective device projects or for the more broadly defined hazard elimination projects, which can include building bridges to direct traffic either over or under a railroad crossing or consolidating crossings. The Department's advisory committee earmarked a large proportion of railroad crossing funding for these types of hazard elimination projects. For instance, prior to FFY 1998-99, it obligated \$1.2 million for a pedestrian/bicycle underpass near the Kohl Center in Madison. We also confirmed that \$6.0 million of the \$8.9 million obligated in FFY 1998-99 (as shown in Table 5) is for two large projects to build bridges over railroad tracks: \$4.3 million for a bridge over Main Street in Neenah, and \$1.7 million for a bridge over Brilowski Road in Portage County. Eventually, the Department plans to spend a total of \$9.3 million of railroad crossing safety funds to complete these two projects.

More recently, in its July 1999 meeting, the committee reviewed 43 potential railroad crossing safety projects to be completed in the 1999-2001 biennium. Of these, 17 projects were approved at the meeting, with an estimated cost of \$1.8 million. Detail on projects approved in July 1999 is provided in Appendix II.

Although federal rules allow up to 50 percent of federal funds to be spent on projects to eliminate hazards, such as projects to construct bridges over railroad tracks, some legislators and others have questioned whether the Department's policy of using federal railroad crossing funds to build these bridges is appropriate. Department staff believe that for some railroad crossings, a bridge is the most cost-effective and safe option. As they note, accidents occur even at crossings with flashing lights and barriers, and only by separating the road from the tracks can crossings be made fully safe. Nevertheless, the size of the bridge projects, the limited amount of federal funding for railroad crossing safety improvements, the significant backlog of protective device projects ordered by the Commissioner of Railroads, and the availability of other federal funding sources for bridge construction continue to raise concerns.

Each biennium, as part of the budget process, the Department develops a budget proposal that allocates the total federal funding available to various federal appropriations in the state budget. This budget is then reviewed and may be modified by the Governor, the Joint Finance Committee, and the Legislature. However, the Legislature is typically not informed concerning the maximum federal apportionment amounts that could be available for each appropriation. As a result, the Legislature is not aware of the amounts the federal government has apportioned among the various programs and, therefore, has limited capacity for oversight over the specific programs receiving funding.

Although \$21.0 million has been obligated since FFY 1994-95, federal funds are not drawn until expenditures are made by the State. Because of the relatively long planning and construction process of completing railroad crossing safety projects, expenditures incurred in appropriations designated for railroad crossing improvement may vary significantly from one year to the next, as shown in Table 6.

Table 6

Expenditures for Railroad Crossing Safety Projects
 FY 1994-95 through FY 1998-99

<u>State Fiscal Year</u>	<u>Federal</u>	<u>State</u>	<u>Local</u>	<u>Total Expenditures</u>
1994-95	\$2,250,455	\$395,516	\$3,570	\$2,649,541
1995-96	667,437	169,785	13,750	850,972
1996-97	399,482	220,869	14,149	634,500
1997-98	2,093,103	471,336	13,695	2,578,134
1998-99*	<u>1,897,994</u>	<u>383,295</u>	<u>82,838</u>	<u>2,364,127</u>
Total	\$7,308,471	\$1,640,801	\$128,002	\$9,077,274

* As of July 27, 1999

While some flexibility in budgeting federal funds among programs in a given year is necessary for the Department to ensure that the State obtains the maximum amount of federal funding, the unique way in which federal transportation funding is apportioned and budgeted allows the Department to exercise considerable discretion in determining how much to spend in each program. Although the Legislature appropriates a specific amount in each of the federal appropriations each year, the expenditure level can be increased administratively.

If the Legislature wishes to provide more oversight in the area of deciding priorities for available federal funds, it could require the Department to make more disclosure of apportionments and obligations in critical programs, as well as long-range plans for use of future federal funding. This information could be helpful in setting appropriation levels and in consideration of additional opportunities for legislative oversight.

Install constant warning time circuitry (approximate cost of \$55,000 per crossing):

- | | | |
|-----|-----------|------------------|
| 28. | Milwaukee | Green Tree Road |
| 29. | Shawano | Green Bay Street |

Total Approximate Cost: \$2,365,000

Source: Office of Commissioner of Railroads

APPENDIX II

**Department of Transportation
Railroad Crossing Safety Projects Approved in July 1999**

	<u>Project Location</u>	<u>Road(s)</u>	<u>Estimated Cost</u>
Install 12-inch flashing light signals:			
1.	Pembine	CTH R	\$75,000
2.	Rudolph Township	CTH DD	88,000
3.	Wyeville	CTH PP	110,000
Install flashing light signals with gate arms:			
4.	Manitowoc	21 st Street	100,000
Install gate arms:			
5.	Westport Township	CTH M	110,000
6.	Kaukauna	STH 55	70,000
7.	Junction City	USH 10	50,000
8.	Stevens Point	W. Clark St.	159,500
9.	Stevens Point	Water St.	159,500
Relocate existing flashing lights:			
10.	Marinette	Marinette Ave.	45,000
Synchronize signals and add a lane:			
11.	Wisconsin Rapids	STH 13/73	75,000
Update existing equipment:			
12.	Green Bay to Crivitz	E&LS Crossings	289,000
13.	Crivitz to Marinette	E&LS Crossings	142,084
14.	Crivitz to Iron Mountain	E&LS Crossings	113,492
Perform surface improvement			
15.	Juda	STH11	100,000
16.	Little Chute	CTH OO	40,000
17.	Wausau	STH 52	68,000
	TOTAL		\$1,794,576

Source: Department of Transportation